

Work Order ID 59856

Tuesday, June 15, 2010 8:46:41 AM



Page 1

Item ID: D2580-1

Revision ID:

Item Name: 205 Skidtube bent detail

Start Date: 6/15/2010 Start Qty: 2.00

Required Date: 6/18/2010 Req'd Qty: 2.00

Reference:

Accept



Setup

Start

Stop



Cust Item ID:

Customer:

Approvals:

Process Plan:

H

Date: 10-6-15

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2580

Rev D

100



HandFinish

Hand Finishing

Memo

1- Inspect mat'l D2500-1-190 for damage.

2- Chemical Conversion Coat as per QSI 005 4.1

0.00

0.00

0.00

0.00

> DP

10-7-27

101



QC

Quality Control

QC3- Inspect Part Finish

Memo

2

11/9/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 59856

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Page 2

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Accept



Setup

Start



Stop



Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110



Skidtubes

0.00

Skidtubes

Memo

0.00

1-Drill pilot holes using drill jig DT 8149 (Do not use cutting fluid)

2-Open holes to 0.500" as per Dwg D2580 without cutting fluid

3-Deburr and blow out all chips from inside of tube

4-Bond web in place per QSI 015.

□□

A/R Sikaflex-291 batch: M115114 □□□

Sikaflex expire date: 11/1/30

Start time and date: 10:00am 10/7/28 bond for 12hrs

10/7/28

M 10/7/27

M 10/7/28

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

BE 10/07/29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 59856

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Page 3

Item ID: D2580-1

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Required Date: 6/18/2010 Req'd Qty: 2.00

Reference:

Accept

Setup

Start

Stop

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Identify as per dwg & Stock Location

0.00

Packaging

Memo

0.00

Packaging

150

QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control



DP

10-7-29

2

10/07/29

10-7-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Tuesday, June 15, 2010 8:46:45 AM

7



Parent Item: D2580-1

Parent Item Name: 205 Skidtube bent detail

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP B01.11.08 Revised Step 9, 10, 12, and 13 SM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-190  Ext'n - I' Beam Tube 4"		Manufactured	No				Each	114.0000	1	2			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		114							
				52319		31							
				58427		83							
D2596  Web, 205 Skidtube		Manufactured	No			110	Each	0.0000	1	2		11/10/7/28	
						B 608SS		(2)				11/10/7/28	

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART**RELEASED**
07-06-28 #

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY SCALE NTS	
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY

RETURN TO:

ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. 55834

Pdt 10-6-13

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07-06-28

Diagram illustrating the underside of the component, showing the location of the D2576-3 STEP and the GRIND FLUSH. The diagram also indicates the LOCATION RIDGE ON UNDERSIDE OF D2576 and the GRIND FLUSH (4 PLACES).

Technical drawing of a circular component with the following labels and dimensions:

- #0.208**: Dimension for the central hole.
- DRILL PRIOR TO D2855 CAP INSTALLATION (2 PLACES)**: Instruction for drilling two locations.
- AN3-5A BOLT (1)**: Label for one of the bolts.
- AN960JD10L WASHER (1) (2 PLACES)**: Label for the washers.
- D2855 CAP**: Label for the cap.
- SEAL WITH SIKAFLEX-241/-291**: Instruction for sealing.
- 0.40**: Dimension for the distance from the center to the edge of the cap.

Diagram showing a cross-section of a propeller assembly. Labels include: D2579 SPACER, D2596 WEB (REF), ALST-1032-130 (REF) (TYP 50 PLACES), and a handwritten 'R' with an arrow pointing to the outer edge. Below the diagram is a list of instructions:

1. CHAMFER HOLE 0.050 X .437
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C/BORE D2579 SPACER TO $\phi 0.437 \times 1.00$ DEEP

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

Technical drawing of a shaft with dimensions and labels:

- Top left: 37.50 (dimension), DISTANCE TO AFT END OF D2596 WEB (text), 3 and 7 (triangle symbols).
- Top right: 1.750 (dimension), 1.750 (dimension), $\varnothing 0.508$ (TYP.) (40 PLACES) (text), REFER TO DETAIL A (text).
- Left side: REFER TO DETAIL A (text).
- Bottom left: 38.0 (dimension).
- Bottom center: 8.750 (dimension), 17.375 (dimension), 26.000 (dimension), 34.188 (dimension), 91.500 (dimension).
- Bottom right: 57.313 (REF) (text), 7 EQUAL SPACES (text), 8.188 PITCH (text), 190.0 (D2500-1) (text).

Technical drawing of a road cross-section showing a 4% grade and a 20.0' radius curve. The drawing includes dimensions for the distance between the hole and the tangent point (1.0' and 13.4') and the distance between the hole and the tangent point (1.0' and 32.0 ± 1.0').

0.5

1.5

1.5

0

0

P

P

P

P

P

P

P

0.5

1.5

1.5

1.5

WELD AS PER DETAIL B

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

8

REFER TO DETAIL C

D3566-1

D3566-5

D3566-1

D3566-13

D3564-11

D3564-5

D3564-9

D3564-13

AN3C4A BOLT (1)

AN960C10L WASHER (1)

(50 PLACES)

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11

11

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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CHECKED

11

DATE _____

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07.02.27

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011

14

APPROVED

#

DART

DART AEROSPACE LTD.
HAMKESBURY, ONTARIO, CANADA

	DRAWING NO
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D2580

DATE	TITLE
1-2-68	

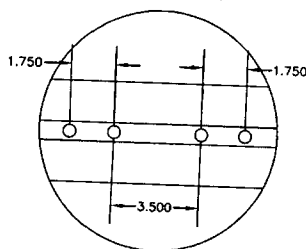
205 SKIDTUBE ASSEMBLY

REV. D

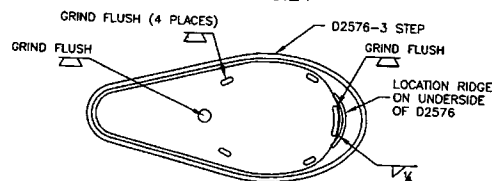
2 DE 3

100

DETAIL E
SCALE 5:24

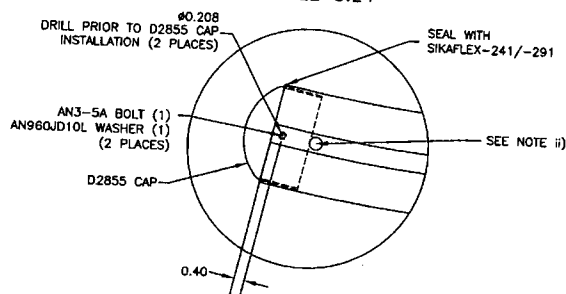


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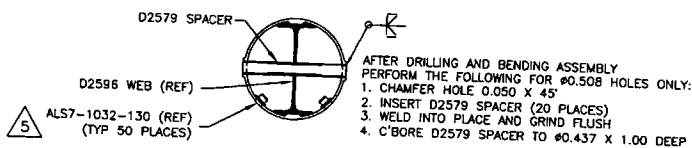


RELEASED
07-18-84

DETAIL G
SCALE 5:24



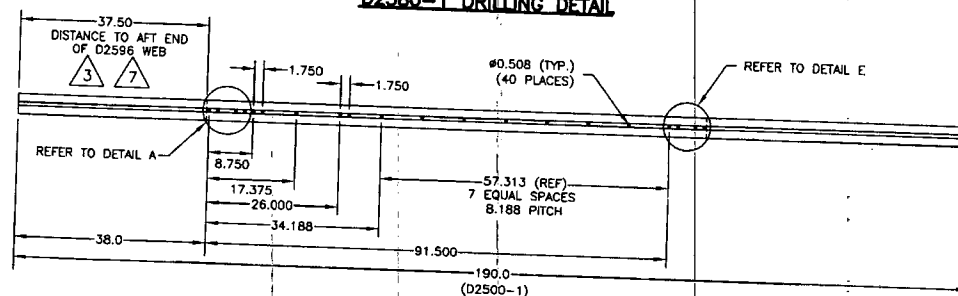
SECTION H-H
SCALE 5:24



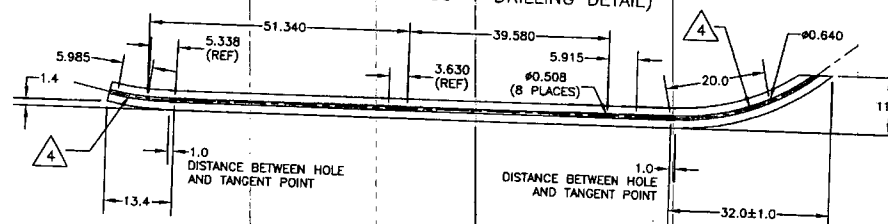
D2580-045 NOTES

- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB. POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3. BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

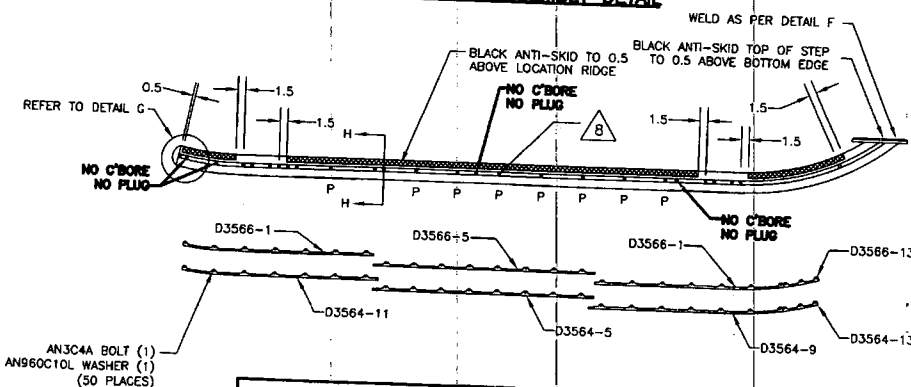
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



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DESIGN RH	DRAWN BY RH	DART DART AEROSPACE LTD. HAMMERSBURY, ONTARIO, CANADA	REV. D
CHECKED H	APPROVED H	DRAWING NO. D2580	SHEET 3 OF 3
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	